Art. XX.—*Observations on the Spread of Asiatic Cholera, and its Communicable Nature.* By John Evans, M. D., Professor of Obstetrics and Diseases of Women and Children in Rush Medical College; Member of the American Medical Association; formerly Superintendent of the Indiana Hospital for the Insane, etc. (From the "N. W. Med. and Surg. Journal.") Chicago, 1849: 8vo. pp. 44.

In the paper before us, Dr. Evans has taken a somewhat different view of the communicability of disease from that advocated by Dr. Knight in his introductory lecture, noticed in the present number. While both maintain that cholera, and other diseases not generally reputed contagious, are capable of being communicated from the sick to the well, Dr. Knight restricts the occurrence of this communication to particular circumstances, when a predisposition to the particular disease has been produced by the epidemic constitution of the atmosphere, and when certain conditions exist in the individuals who are exposed to the morbific agent emanating from the bodies of the infected, by which their susceptibility to its influence is increased. Dr. Evans, on the other hand, maintains that the introduction and spread of those diseases heretofore considered to be dependent solely upon some unknown morbid condition of the atmosphere are invariably by communication, that is, by a poison generated by the bodies of those already affected with the disease, and received by those subsequently attacked.

"It has been the fashion," Dr. Evans remarks, "in all ages of the profession, where the mysterious nature of a disease was such as to leave the observer in ignorance of its cause, rather than acknowledge the humiliating fact, to forthwith attribute it to some changed or unhealthy condition of the air. Particularly in reference to all epidemics is the atmosphere made the scapegoat to bear off the sins of our ignorance, and most admirably does it subserve the wonted purpose; for who can prove that it is not contaminated—that there is not floating in it the fatal miasm? Who can prove a negative, at least until some evidence is given to combat? Certainly, no one; and in this consists the strength of the doctrine of the atmospheric origin of cholera. Has any one detected a change in the character or composition of the air, to which might be attributed the baneful influence? No! Has any one offered any other evidence of the doctrine than that people take the cholera while breathing? If so, I have not seen nor heard it, and the same argument might equally well find the poison in the influence of the moon or stars.

"To explain the spread of cholera by the atmospheric theory, requires us to *suppose*, in the first place, that the air is contaminated. Then, that this contamination is self-propagative by fermentation, vegetation, spawning, or otherwise, or else the poison would soon become so diluted as to run out. Then, that poisoned air travels regardless of the course of the wind. That small bodies of it may go to great distances in very narrow channels. That a streak of it crosses the ocean three thousand miles, from Europe to America, and strikes at a single point, and, invariably, that point a sea-port town. Then, that it will tarry a month at the quarantine within eight miles of New York city, without going farther, and depart for parts unknown. Then, that it will travel the whole length of the navigable waters of the Mississippi and its tributaries, without varying to the right or to the left, and that it will hover over ships, steamboats, and caravans, as they journey on their way. And, finally, that, like contagion, it follows individuals in their journeyings to the interior; and where they stop, it, for a time, hovers immediately around them.

"After having made all these suppositions to found its existence upon, would it not be folly to attempt by the same, or any other kind of reasoning, to show the miasm to be either animalcular, cryptogamous, or gaseous?"

That the cholera, with numerous other diseases which occur occasionally as endemics or epidemics, results from some morbific cause pervading a particular locality, or extending, at the same time or successively, over entire continents or a considerable portion of the earth's surface, is a fact too well established to be set aside by a simple denial of its existence; nor can it be invalidated by the impossibility of demonstrating in what the general morbific cause consists, or in what manner it is generated. We are cognizant of its effects, in the sudden and simultaneous production of disease throughout a community, without the possibility of accounting for the occurrence and spread of such disease by importation from abroad, and the successive communication of a morbific poison from the sick to the well. Diseases of an unquestionably contagious character often prevail epidemically—some of those attacked being infected by the general, unknown, morbific agent or influence, while to others the disease is propagated from those already labouring under it. Scarlatina, measles, chicken-pox, and hooping-cough almost always originate as epidemics, or perhaps, more strictly, as endemics, that is, from some general morbific influence pervading certain districts. We have repeatedly known each of the above diseases to make its appearance suddenly in one of the districts surrounding our city, and the first cases to occur in patients, the infection of whom, by a poison proceeding from the bodies of the sick, was an absolute impossibility. We have known it to remain confined in a great measure to the district in which it first broke out for many days or weeks, notwithstanding the utmost freedom of intercourse was kept up with the city and other districts, and after it had in a great measure or entirely subsided in that district to break out in some other, and that not always the one immediately adjoining. Now the question is, may not diseases, not ordinarily communicable from the sick, become so when they prevail epidemically?

We prefer, with Drs. Knight and Evans, the term *communicable* to contagion, "because the literal meaning of the latter is too limited, implying transmission only by contact, while its general acceptation by the profession implies certain conditions, such as a fixed or uniform time for its development, a febrile action in the disease, a particular mode of exposure to the affected individual, an exemption from second attacks, a certainty of infection from exposure, a uniform course for the disease to run!" &c. The term *infection* is equally objectionable, being synonymous with contagion.

Dr. Evans has given a reason for preferring the term *communicable*, namely, "that the idea of whole cities and neighbourhoods being contaminated by the morbific agent, may be thus introduced, which would be difficult by the use of the terms above referred to;" which we confess we do not fully understand. If he means that a patient labouring under cholera, when introduced into a city or neighbourhood, previously healthy, may give off from his body a poisonous miasm capable of communicating disease to those who have not been in his immediate vicinity, we deny that such a thing is possible. All the observations that have been made in reference to the propagation of diseases by poisonous emanations from the bodies of the sick show that these emanations are active only within a very few feet of the patients by whom they are generated.

In the paper before us, as well as in the lecture of Dr. Knight, some striking facts are adduced in evidence of the communicability of epidemic cholera; and, precisely under the circumstances where the communication of that disease from the sick to the well takes place, we have reason for believing that other epidemic diseases, not ordinarily contagious, may, in like manner, be also communicated.

The recognition of this fact is of some importance in reference to the measures to be adopted for preventing the spread of epidemic diseases. It points out the importance of isolating as much as possible the sick, of preventing at least their accumulation in hospitals or neighbourhoods.

Dr. Evans maintains that the propagation and spread of cholera is invariably by a poison generated by the disease.

"This," he writes, "is the history of the spread of cholera as bearing upon the doctrine of its communication. First, it originates in India. From thence it travels over Asia and Europe, following the lines of human intercourse. It twice pursues the same general course, and twice appears upon the American coast, and in 1848, at two points nearly simultaneously. It stops its ravages under quarantine regulations at the one, and without them extends rapidly at the other. In all these instances of its appearance in the country, it breaks out immediately after the arrival of ships from Europe with cholera on board. It extends from New Orleans up the vast extent of the Mississippi and its tributaries, never appearing at a place until a vessel arrives from the seat of its prevalence with the disease on board.

"It confines itself for months strictly to the banks of these streams, in its first appearance, through the vast region of country that they meander. It spreads to the interior from these river towns with a rapidity proportioned to the intercourse with the places where it first makes its appearance. It prevails in Chicago for months before it extends to the country around it, where there is an interruption in the intercourse with the country, and a city isolated from the settlements around it. It extends through different neighbourhoods in the country only as far as the communication with the sick is kept up, and rapidly subsides in all small communities. As if, on account of its rapid communication, those susceptible to its influence at the time are speedily taken, and for want of others to take it, it entirely disappears. It commits its greatest ravages in particular neighbourhoods, and in Chicago, where the intercourse among the inhabitants is most intimate and frequent.

"In sixty persons affected in one neighbourhood, direct communication can be clearly traced in fifty, and indirect in nearly, if not quite, all of the remaining ten.

"In most cities, its greatest prevalence is transferred from one neighbourhood to another. In a large number of instances, the disease can be traced as communicated from one to another through whole family circles. And during its subsidence, the fact has been remarked that the cases that lingered in our midst in this place, generally occurred in houses where the disease had been before, and often affected those engaged in washing up the clothing and cleaning the sick chamber, as if they might have come in contact with the fomites of communication.

"Notwithstanding neighbourhoods of limited extent seem to be brought under the influence of the poison, do not these facts show conclusively that the disease is communicated? That it is self-propagating? That in its action on the system it develops the morbific agent by which it is extended to others? Certainly, no other reasonable explanation can be given of its course and progress."

If the foregoing statement of Dr. Evans in reference to the course and progress of cholera was established by the leading facts on record bearing upon the question of the origin and spread of the disease, we should certainly be inclined to subscribe to the correctness of the concluding remark. It would be impossible for us, however, within any reasonable limits, to analyze the statements just given, and to test their accuracy by the several histories that have been presented of the disease as it has prevailed in different portions of Asia, Europe, and America, since the year 1817.

So far as regards the introduction and progress of the epidemic cholera in this city, in the year 1832, we are able to speak with great certainty, occupying then a situation which enabled us to watch the disease from its first appearance to its close. We can most positively assert that there was not the slightest evidence of the disease having been introduced from abroad, or that its propagation amongst us was by a poison generated by the sick. On the contrary, the most conclusive evidence was afforded that the disease originated and spread from some general cause to which all were alike exposed, and the influence of which was, to a certain extent, felt by all.

In 1849, we saw, we believe, the first case which occurred in Philadelphia. It was in an individual from New York, where the disease already prevailed; but between this case and those which subsequently occurred, not the slightest connection could be traced, either in consequence of proximity of residence or intercourse. The same evidence was presented as in 1832, that the origin and spread of the disease resulted from some unknown epidemic morbific cause.

We nevertheless think it not improbable that, when the general predisposition to cholera already exists, the arrival of an individual labouring under the disease may be the means of its communication to the inmates of the same house or to those who have frequent intercourse with him, and that from these it may be communicated to others. But in such cases the course and spread of the disease will be very different from those in which it is produced by the general epidemic cause. D. F. C.

ART. XXI.—*The History of the Cholera in Exeter in* 1832. By THOMAS SHAPTER, M. D., Physician to the Devon and Exeter Hospital, the St. Thomas Hospital, near Exeter, for Lunatics, the Lying-in-Charity, &c. &c. London, 1849: 8vo. pp. 297.

WERE we to judge of the character of the present work by its title, we should be greatly deceived. The physician, at least, would expect to find a professed history of the cholera in any given locality, and devoted mainly to the circumstances under which the disease occurred—the classes of the community among which it prevailed to the greatest extent, and with the most virulence—its pathological history, and the plans of treatment found most successful in arresting its fatal progress. The work of Dr. Shapter, however, is made up chiefly of a very minute account of the measures pursued by the authorities and inhabitants of Exeter, and its vicinity, to prevent the occurrence of the disease in their midst, previously to its visitation, and to moderate its violence, and prevent its spread, after its appearance. Upon many of the particulars connected with the medical history of cholera, it is true, the work contains much useful information; but this occupies but a small portion of it compared with that devoted to rather tiresome details of the measures pursued to improve the sanitary condition of the poor of Exeter, and of the city generally—without any very satisfactory attempt being made to determine how far these measures were successful in the prevention of the disease, or in disarming it of its malignancy. The author does not himself appear to be certain that his "History of the Cholera in Exeter" will prove to be one of general interest.

"It will probably appear," he remarks, "that some portions of the following pages are redundant and burthensome; such as the resolutions and proceedings of the public bodies, the names of persons, the various handbills which were then issued, &c.; at this early period they may perhaps be so, but in recording them, I not only looked to give a full and accurate history of the time, but likewise kept in view that future period, when a change of habits and circumstances may give them point and interest." "I cannot but feel that, had there been preserved similar documents of the plagues which, in old times, have passed over Exeter, and of which there are now only a few index notices, they would form a record of the greatest interest; nor can it fail to be perceived that that with which we regard the plagues of Athens, Milan, Marseilles, and London, is solely derived from the authentic details which have been preserved of them."

Most of the sanitary measures pursued by the local Board of Health of Exeter, after its establishment, were unquestionably of a very judicious character; and, considering the difficulties experienced in carrying them into effect, originating in the fears and prejudices of the very portion of the populace who were to derive from them the greatest advantage, the board deserve great credit for their firmness and perseverance. Some of the measures adopted, were founded upon an idea of the extremely contagious character of cholera, and which, while they were unnecessary in themselves, were positively mischievous by their tendency to increase the prevalence and mortality of the disease, by augmenting the fears and depressing the courage of the inhabitants. Such were the enveloping of the bodies of those who died of cholera, in pitched cloths—their interment in especial cholera burial-grounds—the burning of tar barrels in the streets to purify the air—the profuse employment everywhere of various doubtful disinfectants; to such an extent, indeed, that the author remarks:—

"The whole air was in fact poisoned with the injudicious use of what were considered to be disinfectants; and it was not an uncommon complaint, that the smell of all these things was worse than the cholera smell itself." "At the burial of the last body in the Bartholomew yard, the officiating clergyman, on its completion, desired the undertaker to hold out his hand for a something which